

Was the 2012 U.S. drought profitable for the ABCD?

**Bachelor Project submitted for the Bachelor of Science HES in Business
Administration with a major in International Management**

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Declaration

This Bachelor Project is submitted as part of the final examination requirements of the Geneva School of Business Administration, for obtaining the Bachelor of Science HES-SO in Business Administration, with major in International Management.

The student accepts the terms of the confidentiality agreement if one has been signed. The use of any conclusions or recommendations made in the Bachelor Project, with no prejudice to their value, engages neither the responsibility of the author, nor the adviser to the Bachelor Project, nor the jury members nor the HEG.

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Geneva, August 15th 2014

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Executive Summary

This paper seeks to analyse the scope and the impact of the 2012 U.S. drought on the corn, wheat and soybeans markets and its consequences for trading companies.

This drought was the most severe and extensive one of the past decades, reaching a vast majority of land. Lack of water caused river levels to be at their lowest for years leading to the stopping of trade navigation. It was particularly intense in the Midwest, where most of agricultural commodities are grown. While wheat was marginally hit, corn and soybeans, the dominant crops in the country were devastated.

Since the United States is a world top producer and exporter of both corn and soybeans, the consequences on global markets were serious. Corn and soybeans prices soared in a few months setting record highs. Ethanol and biodiesel mandated production also raised concerns as crops and water needed to produce the biofuels were in short supply.

ADM, Bunge, Cargill and Louis Dreyfus commonly called the ABCD are the major players in agricultural commodities trading. With assets all over the world, they control together 90% of global grain trade. Thus, they are the focuss of this research.

In the 2012-2013 markets conditions, the ABCD, had rather tough times. At the beginning though, they tried to leverage their international presence to smooth out the world supply and demand imbalances. This proved to be efficient and as a result, the second half of 2012 saw some of the most profitable quarters for the trading houses.

However, lack of supply hit back in 2013. The trading companies own many processing and logistic assets that need to be fully used in order to be profitable. With tight supplies it was difficult to keep operations running and some plants had to idle for a while.

Overall, this study has shown that it is crucial for an integrated trading company to diversify its activities. It should not be focussed on one region only but have assets all over the world to mitigate the impact of regional events like droughts.

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1. Objectives and methodology

The objective of this research is to demonstrate whether trading companies can take advantage of a drought to increase their profit. The emphasis is on the ABCD since they dominate the agricultural products trading.

At first sight, these four companies look alike. They are all globally present and seem to have similar activities in agricultural commodities. They all claim to strive for nourishing the growing population. Hence, we will analyze if they are truly the same or if differences do exist. Moreover, we will look at the extent to which they were affected by the drought and the way they dealt with it. Finally, we will try to understand why some were more affected than others and analyze how they could improve to protect themselves better against a future drought.

The research is composed of three parts. First, the drought is defined and analyzed to see its extent and how it affected the crops and harvest. Then, the data collected in articles of newspapers are exposed and analyzed to see the consequences on the trading markets. Finally, the data collected in articles of newspapers and annual reports of the four trading houses were analyzed to see and compare how the companies were impacted. The analysis focuses on the structure of companies to understand their different ways to deal with extremely dry weather.

2. United States as production country

The United States has always been a producing country of agricultural products and for a long time the majority of the population lived from farming. Early 20th century, there were more than 6 million small and diversified farms (Hoover, Steuart 1928, p. 4) growing an average of 5 different crops. (Dimitri, Effland, Conklin 2005, p. 2) Growing was slow and laborious as animals remained the primary energy source to work in the field. The crops yield was thus considerably lower than it is today.

However, the agriculture and rural life experienced a huge metamorphosis over the 20th century. Progress in mechanization especially in agricultural machinery allowed farmers to expand their land and grow larger areas. Thanks to advances in biotechnologies and insurance coverage, they could afford to specialize in one or two crops in order to be more efficient and benefit from economies of scale. (Dimitri, Effland, Conklin 2005, p. 6) Consequently, the number of farmers declined from 40% to about 1% of the workforce and the number of farms dropped drastically as their surface rose. (*Crop Background* 2012) Many people left their homes to find other occupations in the cities which led to a 60% decrease of the rural population. (Dimitri, Effland, Conklin 2005, p. 3)

Since then, the U.S. has steadily improved its production as high tech tractors replaced animals. Since crops yield increased considerably, per-bushel production costs were reduced and profitability rose. Today there are only approximately 2 million American farms left but agricultural production has remained an important industry in the country. (*Crop Study Questions* 2012) Although its share of GDP lowered owing to the development of the country, its value in USD increased from 9 billion in 1930 to almost 400 billion today. (*Value of all farm products sold or used by farm households, for the United States: 1944, 1939, and 1929* [no date]; Vilsack, Clark 2014)

2.1. Three major crops

The U.S. has become the top world producer of both corn and soybeans with 13.9 billion bushels and 3.3 billion bushels respectively in 2013. (*NASS - Statistics By Subject* [no date], *NASS - Statistics By Subject* [no date]) The same year it ranked 3rd in wheat production with 2.1 billion bushels. (*NASS - Statistics By Subject* [no date]) In the country, agricultural commodities are multipurpose. They can be transported to ethanol plants; they can be moved from the production area in the Midwest to the local, Southern and Western livestock farms; or they can be exported and traded internationally. This last option interests us most in the context of the 2012 drought.

2.1.1. Corn and wheat

Both corn and wheat are similar in the sense that they are grains as opposed to soybeans which are oilseeds.

In 2013, corn was planted on 95 million of acres taking almost 30% of U.S. farmland. (*Crop Production 2013 Summary* 2014) As most grown crop in the United States corn plays a major role in the national and global economy. Most of production is used as feed for livestock but recently an increasing share has been dedicated to ethanol production. This higher demand pushed prices up and prompted farmers to plant even more corn acreages. Both industries are extensively developed in the United States which considerably reduces the quantity of corn exported and traded. However, although over the past decade the country exported on average less than 20% of production, it represented more than 50% of world exports. (USDA¹ *Economic Research Service - Feed Grains: Yearbook Tables* 2014, *USDA Agricultural Projections to 2023* 2014, p. 21) Consequently, any change in the country's policy or in the weather conditions impacts global supplies and prices.

Wheat is just behind corn and soybeans with 56 million acres planted in 2013 representing 17% of farmland. (*Crop Production 2013 Summary* 2014) Since the 2.8 billion bushels production peak in 1981, the land granted to wheat decreased more than a third. (USDA *Economic Research Service - Feed Grains: Yearbook Tables* 2014) Under pressure of foreign competition, U.S. farmers were prompted to switch to more profitable commodities. But thanks to improved yield, production remained fairly steady averaging 2.2 billion bushels over the period. (*Crop Production Historical Track Records* 2014, pp. 208-209) As opposed to corn and soybeans, genetically modified wheat is not commercially grown in the U.S. The grain is genetically complex thus seed companies are reluctant to invest in research. Besides, it is primarily consumed by human who are sometimes against products containing GMOs. There are several classes of spring and winter wheat but over 70% of production is winter wheat. (*Crop Production 2012 Summary* 2013, p. 77) It is planted in fall, goes into dormancy during winter and is harvested in early summer.

2.1.2. Soybeans

In the United States, soybeans are the second-most planted crop after corn. Generally grown in rotation with corn, they represent the vast majority of oilseeds. Over 76 million

¹. *United States Department of Agriculture*

acres were planted in 2013, taking 23% of farmland. (*Crop Production 2013 Summary* 2014, p. 44) When soybeans are crushed, about 78% becomes meal and 18% oil. (*Uses of Soybeans* 2014) Similarly to corn, soybean meal is mostly dedicated to livestock as they are a large source of protein feed while soybean oil is used for Biodiesel production. Over the past decade, the nation's exports of soybeans represented on average 40% of its production which accounted for nearly 30% of world exports. (*USDA ERS - Oil Crops Yearbook* 2014, *USDA Agricultural Projections to 2023* 2014, p. 29) However, the U.S. weight in global exports tends to decrease as domestic consumption for biodiesel and exports of other countries increase.

2.1.3. Comparison

These crops are slightly different in terms of **planting** and **harvesting** seasons. The growing periods of these crops are important to understand the impact of the 2012 drought.

Table 1 – Planting and harvesting seasons

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Corn				P	P				H	H	H	
Soybeans					P	P				H	H	
Spring Wheat				P	P			H	H			
Winter Wheat						H	H		P	P	P	

(*Field Crops Usual Planting and Harvesting Dates* 2010, p. 9, 25, 33-34)

Corn and soybeans are similar in terms of growing period. Planted in spring, they are harvested in fall before the winter comes. Thus, summer is an important period as weather conditions can boost and foster the quality of the coming harvest or deteriorate and wipe out the crops. On the other hand, spring wheat matures earlier. Planted at the same period as corn and soybeans, it grows faster and it is therefore less subject to weather conditions. Although winter wheat goes into dormancy during the winter, it has already time to grow in fall and continues its expansion in spring which is why it is harvested long before corn and soybeans.

3. The markets before the drought

Between 2010 and 2011 corn and wheat prices more than doubled in less than a year while soybeans price gained close to 50%. (*Maize (corn) - Daily Price - Commodity Prices - Price Charts, Data, and News - IndexMundi 2014*, *Soybeans - Daily Price - Commodity Prices - Price Charts, Data, and News - IndexMundi 2014*, *Wheat - Daily Price - Commodity Prices - Price Charts, Data, and News - IndexMundi 2014*) Despite the seasonal downward trend², prices remained high throughout 2011 as it was not an optimal year. Some regions of the U.S. experienced dry conditions. Soybeans and wheat had a poor year with production decreasing from 2010. Consequently, the U.S. 2011 ending stocks of soybeans and wheat were 37% and 11% lower than the average of the previous 30 years. For what concerns corn, although production was in the order of that of 2010, it was not sufficient to refill the stocks which ended 46% below the average of the previous 30 years. (*United States Corn Ending Stocks by Year (1000 MT) 2014*, *United States Soybean Oilseed Ending Stocks by Year (1000 MT) 2014*, *United States Wheat Ending Stocks by Year (1000 MT) 2014*) In this context the global markets were looking forward to the new harvests as supplies were getting tight.

The forward curve³ clearly shows the state of the corn market at that time.

Figure 1 – Corn forward curve, March 15th 2012



(Futures Forward Curve 2014)

². Prices are generally lowest at harvest and progressively increase until the next harvest

³. The forward curve, which represents future prices of a commodity, can be either in contango or in inversion. Contango means the near month's price is lower than the later months' prices because the market is well supplied and inversion means the opposite. With agricultural commodities, there is seasonality. This means that the forward curve is normally in contango at harvest and later turns into inversion before the next harvest.

The corn forward curve was already inverted as of mid March for the May 2012 contract while it is normally still in contango at that period. On the other hand, despite a poor soybeans production, the forward curve remained as usual in contango until the July contract and then turned into inversion until the November contract. The wheat forward curve does not seem to have been affected either. Although some seasonality can be seen in the curve, it tends to be generally in contango and this shape did not change before the 2012 harvest. (*Futures Forward Curve* 2014)

To relieve all concerns, the 2012 growing season started off very well with ideal planting conditions for farmers. Favorable field conditions and above-average temperatures lead corn and soybeans growers to plant at a breakneck pace throughout April and May. The USDA monthly report⁴, considered a benchmark in the agricultural commodities trading, predicted in May 2012 a corn production of 14.8 billion bushels, based on the largest planted area in the past 75 years. It also said that the corn yield would reach a record of 166 bushels per acre. In the same way, soybeans production was expected 6% higher than the previous season with 2.4 bushels more per acre.

Newspapers also expressed confidence in their articles. Reuters titled on January 30th 2012: *“Relief in U.S. food prices seen as crop supplies grow”* and Bloomberg wrote on February 23rd 2012: *“U.S. sees bigger corn crop as farms boost acres to 1944 high”* while Marketwatch published on March 30th 2012: *“Farmers to plant most corn in 75 years”* and the Financial Times stated on May 10th 2012: *“Record US corn crop set to ease prices”*.

3.1. Trading patterns prior to the drought

There are two other ways than the calendar year to consider a grain crop year. The marketing year is the 12-month period starting at the beginning of the main harvest and it varies depending on the country while the trade year standardizes all countries on the same 12-month period for comparisons. However, since Soybeans are not grains, they are only considered in terms of trade year. The United States is the only major grain producer that has a marketing year different from the trade year.

⁴. World Agricultural Supply and Demand Estimates

Table 2 – Trade and marketing years

	Corn	Soybeans	Wheat
U.S. marketing year	September – August	September – August	June – May
Trade year	October – September	None	July – June

(*Grain: World Markets and Trade* 2014, p. 48, *Oilseeds: World Markets and Trade* 2014, p. 11)

The specificity of agricultural products is seasonality which means the harvest period is known and all the production comes at once. Consequently, the quantity can generally be estimated and anticipated based on the planted acres and expected yield.

However, factors such as weather conditions and soil erosion can hamper the growing of the crops, leading to high price volatility on the markets. The advantage is that these three commodities can be hedged on the derivative market since futures contracts do exist.

As shipping is the cheapest way to transport commodities, the normal course of export for grains and oilseeds is either North to the Atlantic Ocean on the St. Lawrence River, or South to the Gulf of Mexico on the Mississippi River, the latter being the dominant way.

4. Definition of a drought

It is rather easy to define a natural disaster such as an earthquake or a flood whereas a drought is much more subtle and people may realize long after its start that a region is actually experiencing a drought. Concretely its definition depends on its length and its severity as well as on the point of view from which it is looked at. Moreover, it does not mean the same to a farmer, a meteorologist or a water manager.

There is no single definition of a drought because there is not only one type of drought. The U.S. National Oceanic and Atmospheric Administration distinguishes meteorological, agricultural and hydrological drought which are assessed by deficit in precipitation, soil moisture, and stream flow, respectively. (*Overview of Drought Task Force Research Objectives* 2014) If a drought is commonly known as “a prolonged period of dry weather; lack of rain” (*Collins American Dictionary Online* 2014) professional agencies give the following definitions:

“A drought is a period of moisture deficiency that affects the crops under cultivation.”

(U.S. Geological Survey 2014)

“Drought means a moisture deficit bad enough to have social, environmental or economic effects.”

(United States Drought Monitor 2014)

“Drought is a protracted period of deficient precipitation resulting in extensive damage to crops, resulting in loss of yield.”

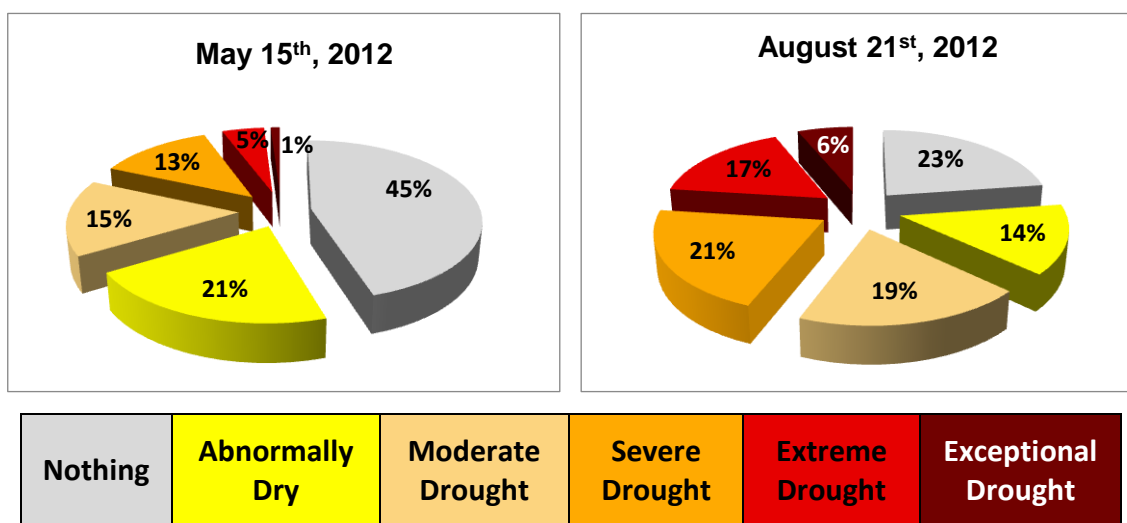
(National Drought Mitigation Center 2014)

The period of the year is also important for a farmer since a water shortfall during the growing season – roughly June to August for corn, spring wheat and soybeans – is a lot worse than in the winter.

5. Consequences on the crops

According to the Economic Research Service of the USDA, the 2012 drought was the most severe one in the last 25 years and the most extensive one in the last 60 years, reaching 80% of land. As previously explained it is difficult to find the exact beginning of a drought. However, in this case, rainfalls were much lower than normal throughout the summer and soil moisture quickly worsened from June to July to persist in August. The USDA said in early July that over 1'000 Counties in 26 States were natural-disaster areas, the biggest such declaration ever. (Zumbrun, Drajem 2012)

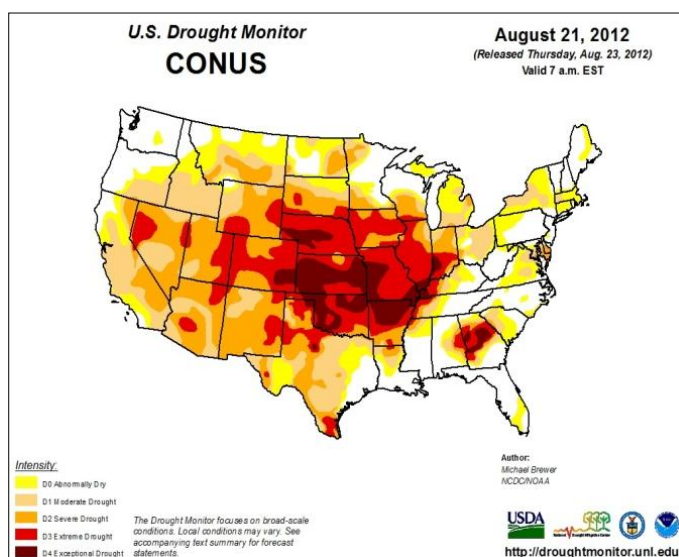
Figure 2 – Land affected by dryness



(United States Drought Monitor 2014)

The drought hit in particular the Midwest where most of the three commodities considered in this project are grown. The Corn Belt which is composed of a dozen States of the Midwest stretching from Ohio to Nebraska is the first growing region of the United States.

Figure 3 – Drought map



(U.S. Drought Monitor Weekly Comparison 2014)⁵

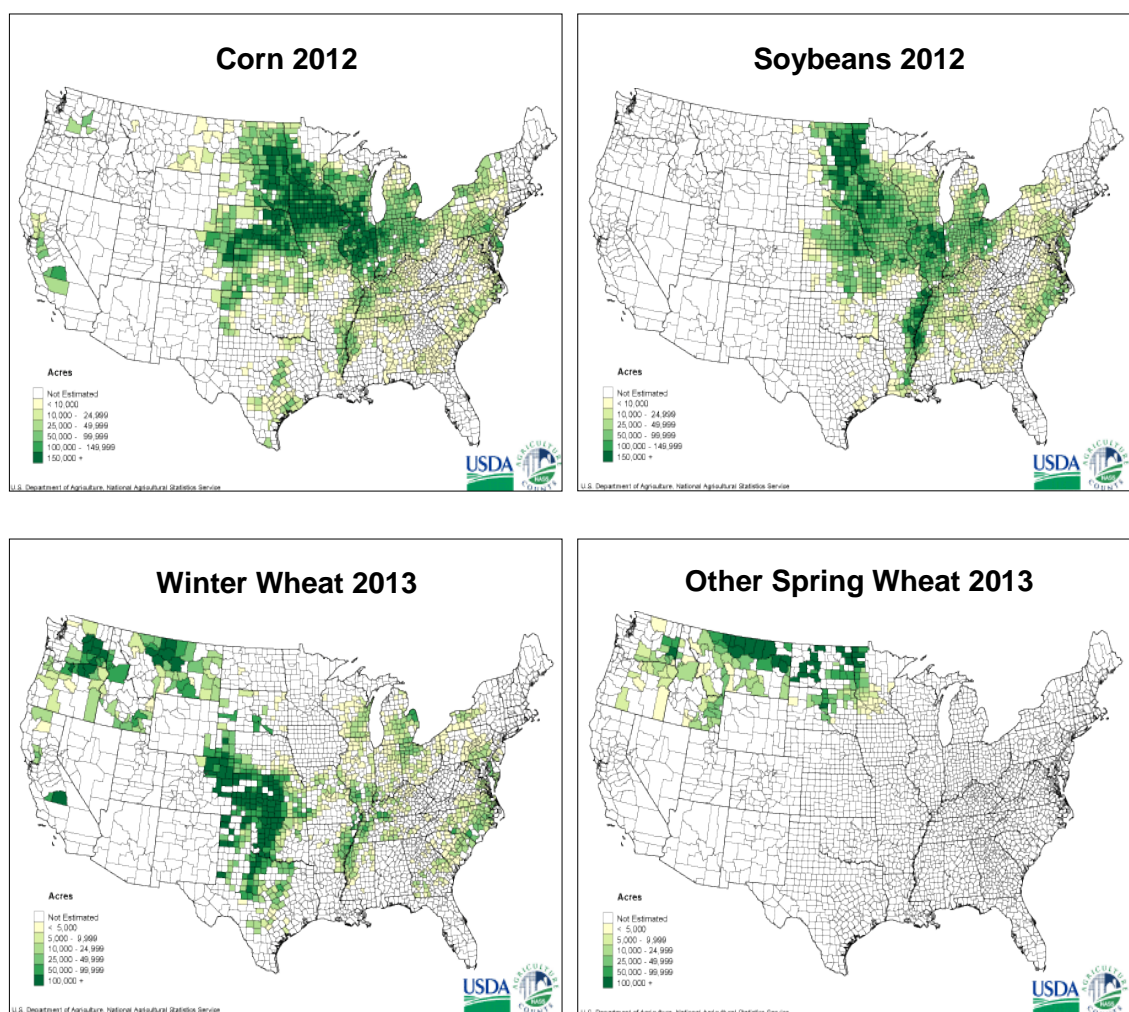
Although corn is grown in almost every State, it is interesting to see that 80% of harvest is produced by only 20% of the States with Iowa and Illinois producing together even a third of U.S. corn. On August 21st, 80% to 100% of land in Illinois, Indiana, Iowa, Kansas, Missouri and Nebraska, where over half of U.S. acres were planted, were hit by drought characterized at least as severe. (*Tabular Data Archive* 2014) Average yield in these States was 24% lower than in 2011 which resulted in a decrease in production of 13%. If compared to the production estimates of the USDA for May and November, the drop reaches 27%. (*Crop Production 2013 Summary* 2014, p. 9)

Soybeans production is a little more equally distributed than it is for corn but 20% of the States still produce close to 60%. Soybeans also suffered a lot from extremely dry conditions. They are grown in about 30 States but the 6 key States are also located in the Midwest. Over one third of U.S. planted acres were in Illinois, Indiana, Iowa and Nebraska which were affected at 80% to 100% by at least severe drought on August 21st. (*Tabular Data Archive* 2014) Average yield in these States was 15% lower than in 2011 which resulted in a decline in production of 3%. If compared to the production estimates of the USDA for May and November, the fall reaches 7%. (*Crop Production 2013 Summary* 2014, p. 45)

⁵. The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC-UNL.

However, some States got away with much less damage. North Dakota, typically gained three, respectively four ranks in corn and soybeans production in 2012. It even surpassed Illinois by 16% in terms of production yield. It also had record high wheat production yield. In fact, U.S. wheat production increased in 2012, mainly because most of the U.S. production consist in winter wheat which is harvested in early summer. As it matures before the other major crops grown in the U.S. it was less affected by the drought. The May predictions of the USDA were quite accurate with an actual production only 0.9% higher. (*Crop Production 2013 Summary* 2014)

Figure 4 – Crops planted acres



(National Agricultural Statistics Service, USDA 2014)

Although the two above maps for winter and spring wheat are based on the 2013 data, they are very similar to the 2012 crops since planted acres increased less than 1%. (*Prospective Plantings* 2014, p. 10)

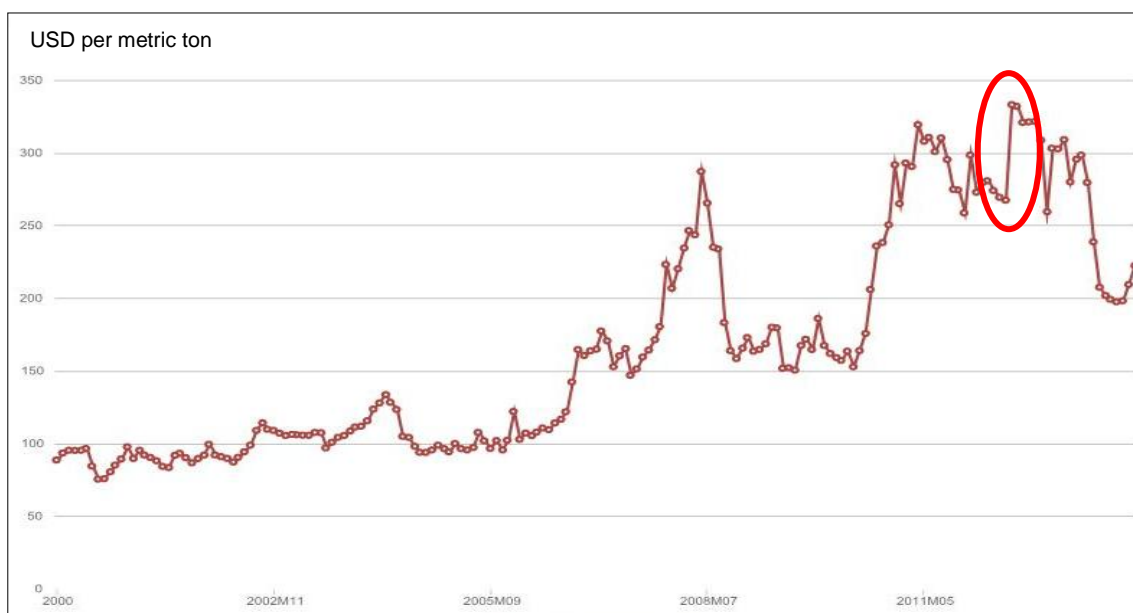
6. Consequences on the markets

As previously explained, the consequences of the drought were even more severe because everybody expected an outstanding production for 2012. Specialists were concerned that the drought could have a hard impact on the global markets. *“It might be a \$50 billion event for the economy as it blends into everything over the next four quarters.”* (Zumbrun, Drajem 2012) Although crops farmers were the first victims, they coped well thanks to emergency assistance programs and good insurance coverage. Since the primary function of corn and soybeans is feed for livestock, high prices were carried over to cattle and dairy producers. This way, the burden of high prices was spread across the whole supply chain to the end consumer. But commodity prices were only one among many factors impacting retail food prices. Historically, a 50% rise in corn price meant a retail food prices increase of less than 1%. (*USDA Economic Research Service - U.S. Drought 2012: Farm and Food Impacts 2013*)

6.1. Price

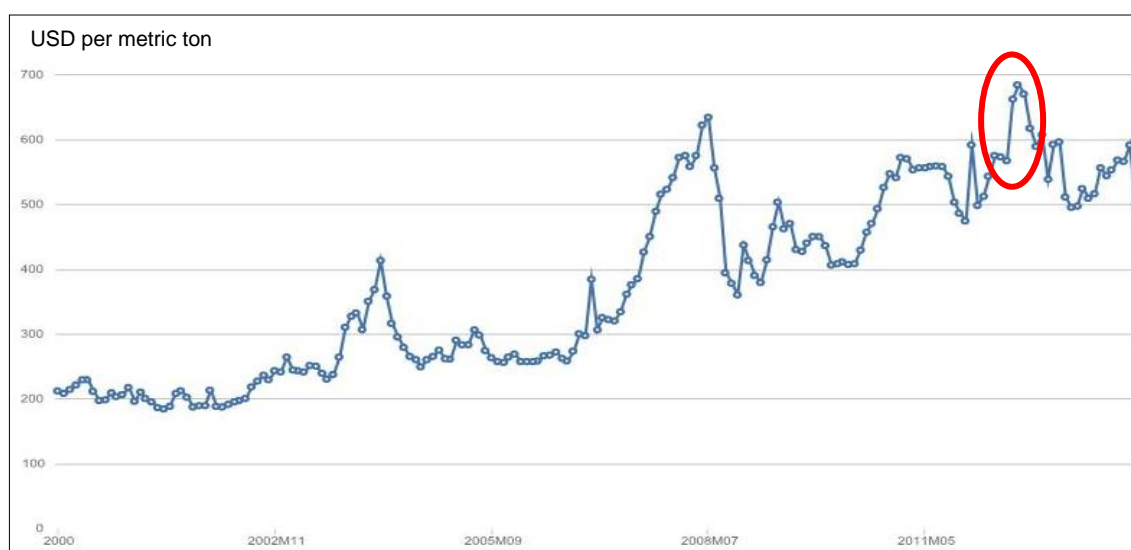
As drought worsened and crops deteriorated, prices skyrocketed from June to July 2012. As demonstrated by the graphs corn price hit a record of 333.1 US dollars per metric ton in July, an increase of 25% over a month, while soybeans, jumped over 20% in two months to set a new record in August at 684 US dollars per metric ton.

Figure 5 – World corn price



(Global Economic Monitor (Gem) Commodities 2014)

Figure 6 – World soybeans price



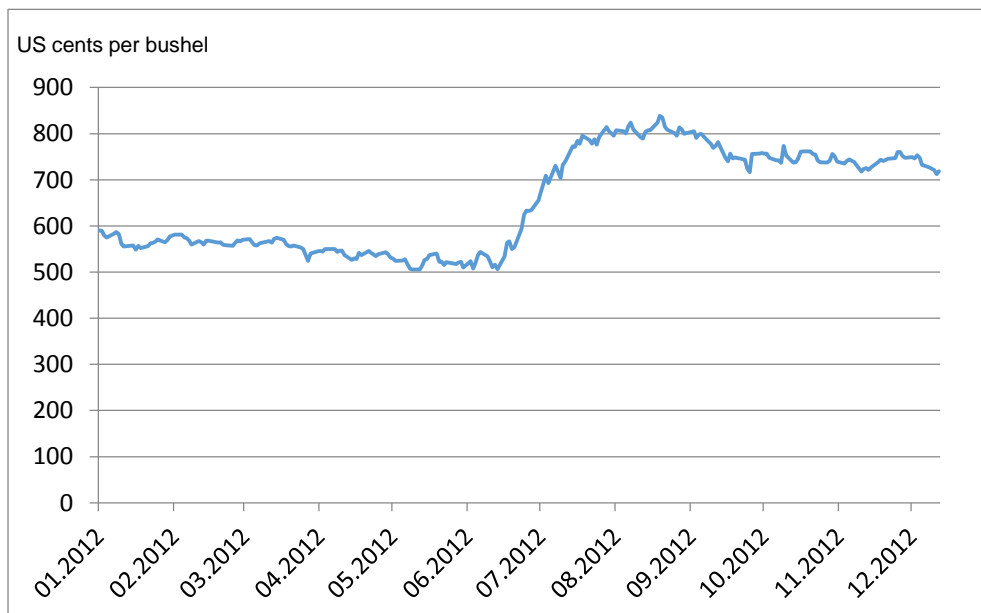
(Global Economic Monitor (Gem) Commodities 2014)

Although wheat price went up 25%, it stayed around those of 2011. (Global Economic Monitor (Gem) Commodities 2014) As previously seen on the maps of Figures 3 and 4, the crop was little touched by the weather and supply for the 2012-2013 marketing year remained constant. As consequences on the market were insignificant, this project will thereafter focuss on corn and soybeans.

6.1.1. Futures contracts

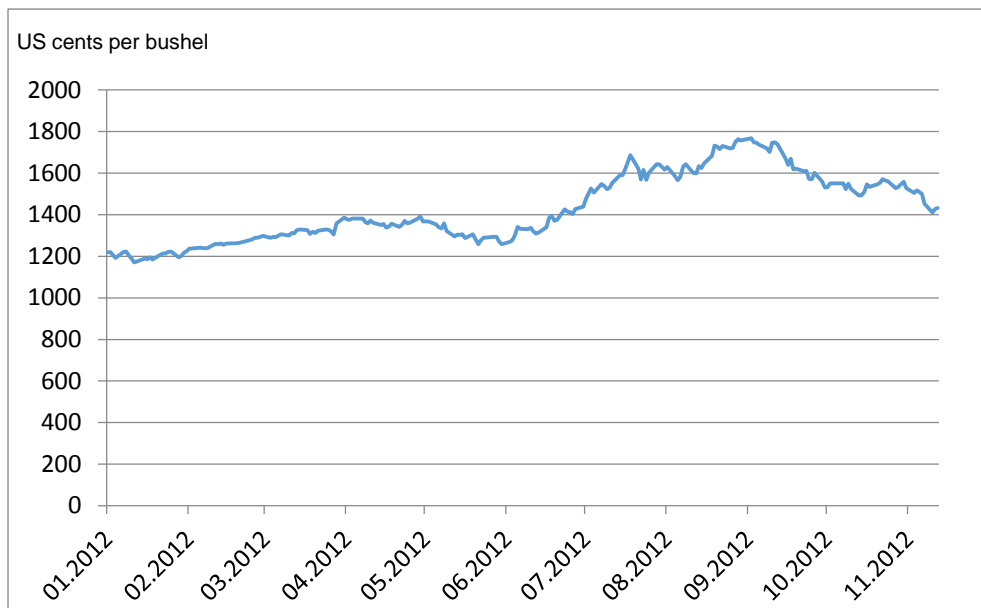
There are five futures contracts for corn annually, namely March (H), May (K), July (N), September (U) and December (Z). (Corn Futures Contract Specs 2014) On the other hand, soybeans are traded in seven futures contracts per year, namely January (F), March (H), May (K), July (N), August (Q), September (U) and November (X). (Soybean Futures Contract Specs 2014) Generally, the most traded contract is the one right after harvest, meaning December for corn and November for soybeans. (Corn Futures Settlements 2014, Soybean Futures Settlements 2014) Logically, these two contracts showed the highest prices during the drought since the markets feared a crops shortage. Futures prices followed the same path as flat prices and skyrocketed at the end of the summer. As demonstrated by the two charts below, corn December futures surged over 60% from mid June to mid August while soybeans November futures climbed 40% from early June to early September. (Corn Futures December 2012 2014, Soybeans Futures November 2012 2014)

Figure 7 – Corn December futures price



(Corn Futures December 2012 2014)

Figure 8 – Soybeans November futures price



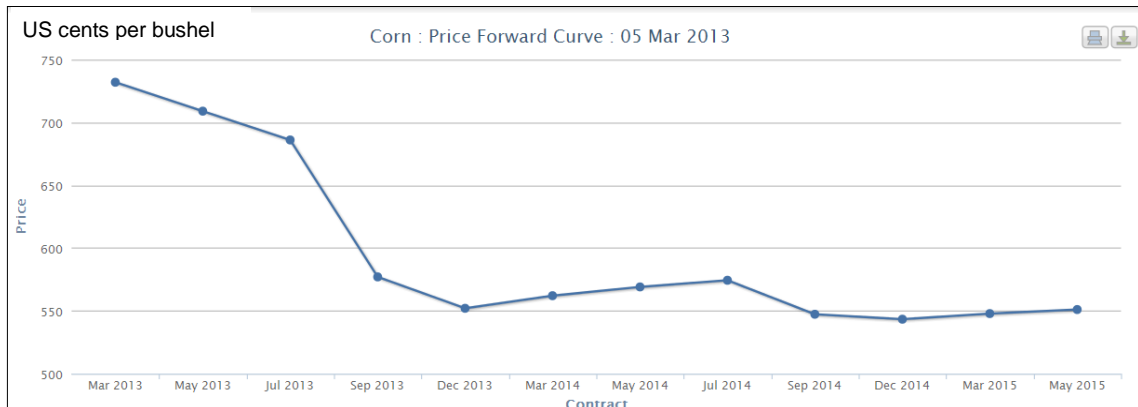
(Soybeans Futures November 2012 2014)

6.2. Forward curves

As previously seen, the markets were already tight after the 2011 harvest season with a corn forward curve inverted earlier than usually. The curve normally tends to turn into inversion from the July to the December contract as supply becomes increasingly scarce towards the new harvest. After the 2012 drought, the markets were tighter than

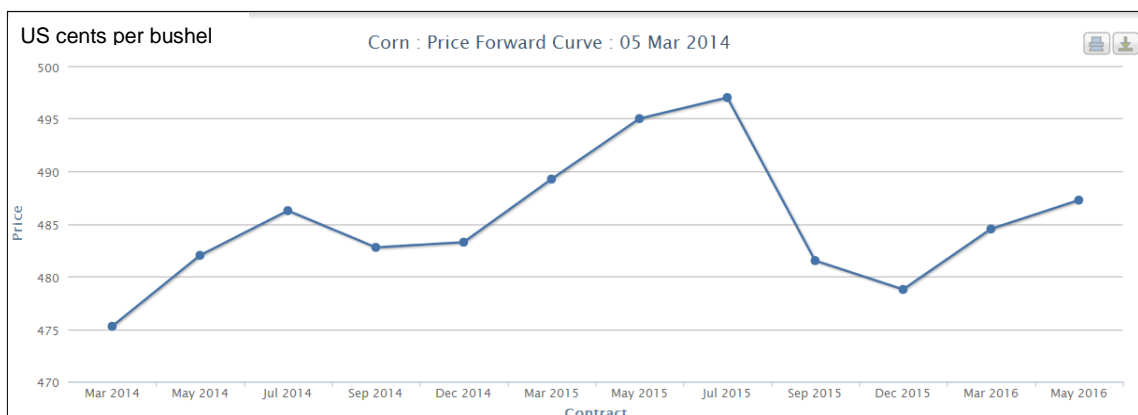
ever. To understand the situation, it is important to remind that the 2013 corn crop was excellent and came in at a record 13.9 billion bushels. The following graphs show the difference between the corn forward curve as of the 5th of March 2013 and as of the 5th of March 2014.

Figure 9 – Corn forward curve, March 5th 2013



(Futures Forward Curve 2014)

Figure 10 – Corn forward curve, March 5th 2014



(Futures Forward Curve 2014)

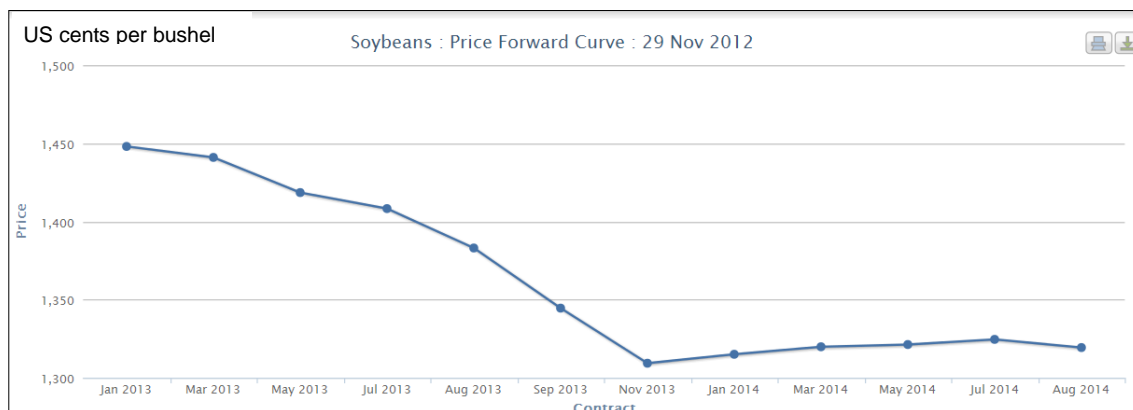
The price of corn was much higher in 2013 than the next year since the markets really wanted the physical delivery. The drought caused inventories to be much lower than normally, pushing therefore the price up.

The soybeans forward curve was doubtless impacted by the drought as it remained inverted throughout the whole year, even at U.S. harvest in November. However, the shape of the forward curve in November 2013 is surprising since the harvest was excellent. Part of the answer lies in the fact that the U.S. represents only 30% of world soybeans exports (compared to 50% for corn) and therefore has less influence on the

international market. Besides, Argentine farmers, which are the third world exporters, hoard the crop as USD reserves to hedge against inflation. (Bronstein 2013)

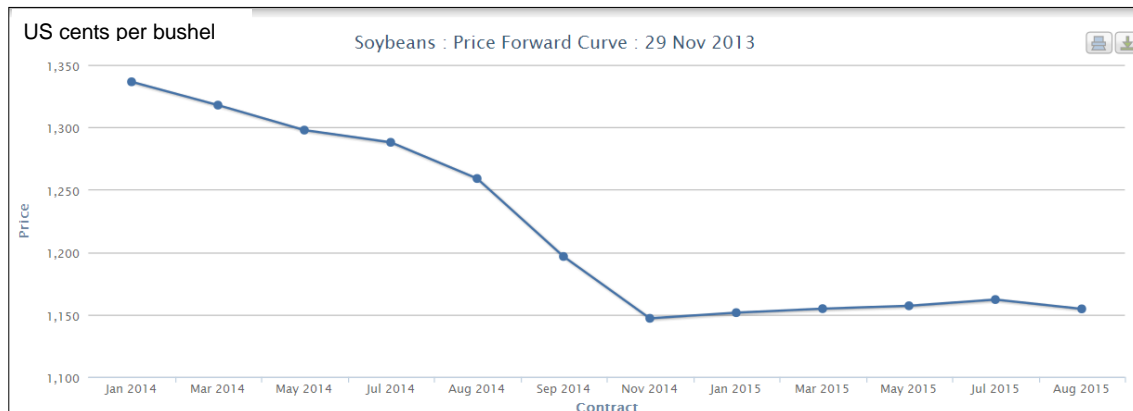
The following graphs show the difference between the soybean forward curve after harvest, on the 29th of November 2012 and 2013.

Figure 11 – Soybeans forward curve, November 29th 2012



(Futures Forward Curve 2014)

Figure 12 – Soybeans forward curve, November 29th 2013



(Futures Forward Curve 2014)

6.3. Ethanol and Biodiesel

Almost any crop grown in the United States can be transformed into fuel. For example, when processed, corn produces ethanol which is blended with gasoline while soybeans produce biodiesel.

At the national level, renewable fuels are predominantly based on ethanol since cars run on gasoline and ethanol is almost only made from corn. Thus, the majority of ethanol plants are located in the Midwest to avoid unnecessary transportation costs. It

is crucial for a processing asset to always keep on working because idling or stopping operations is very expensive. In 2007, the Congress of the U.S. enacted the “*Energy Independence and Security Act of 2007*” which required the production and use of renewable fuels to increase from 4.7 to 15.2 billion gallons in 2012. (*Energy Independence and Security Act of 2007* 2007, p. 31) The consequence of this new law was that it required over 40% of the 2012 corn production to meet the quota. (*Feed Grains Custom Query* 2014) Though, this act does not provide for exceptions when the crop is reduced because of extreme weather conditions. The markets were therefore very concerned when the drought hit and corn production estimates decreased sharply. The United Nations and the governors of eight States asked for a suspension of this mandated ethanol production but the Obama administration refused to do so since it claimed that markets conditions did not justify such a suspension. (Blas 2012a; Parker, Bjerga 2012) It is interesting to see that 3 gallons of water are needed to produce 1 gallon of ethanol. In a drought period this mandate really becomes an issue since water is scarce. (*Water Use for Ethanol Production* 2014)

As opposed to ethanol, biodiesel is not produced only from one input. It is based on biomass which is composed about half of soybean oil and half of other vegetable oils and animal oils. Besides, biodiesel production is marginal since only 12% of the 2012 soybeans production was inputted to biodiesel. (*Monthly Biodiesel Production Report* 2014, *Uses of Soybeans* 2014) The government mandate on renewable fuels production is also much lower for biodiesel since the 2012 requirement was 1 billion gallons. (*Energy Independence and Security Act of 2007* 2007, p. 32) Consequently, during the drought the mandate was much less of an issue and did not raise concerns and complaints from blenders and refiners.

6.4. Physical flows

American rivers are predominantly used for commercial matters as 60% of the country’s grain exports are shipped by barges. The Mississippi river is critical to the nation’s raw material transportation network. It rises in Northern Minnesota and flows South through the Midwest until the Gulf of Mexico. Its strategic path makes it the main channel for grain transport. (*Waterways System* 2014; Bjerga 2012)

However, the river is vulnerable to low water level since a conventional barge needs at least a depth of 9 feet and a width of 300 feet to travel safely. (Haggerty 2012) Although December and January historically record the lowest water levels, extreme heat and low rainfalls brought about the closure of an 11-miles stretch of the

Mississippi River in late August 2012 because of insufficient depth. Hence, about hundred boats had to sit idle contributing to commodities price increase and supplies concerns in the markets. (Sanburn 2012)

Drought-caused low inventories pushed corn prices up before the 2013 harvest which was delayed by late planting due to wet spring. Thus, the new Corn Belt crop was not ready until early October which triggered the rare flow of grains from South to North. Some trains and barges, that normally carry the harvest out of the Corn Belt, reversed routes to offset demand of local meat and ethanol producers. (Larsen 2013) Early harvesters such as Louisiana and Arkansas, typical exporter States, started to send their 2013 crop to the Midwest. About 1'000 barges of new corn crop were shipped North on the Mississippi River since prices spiked in the Corn Belt due to corn shortage. (*Barges and Tugboats* [no date]) As the standard size of a barge is 1'500 Metric Tons (MT) this represents approximately 1.5 million MT of new crop corn that was shipped northward. Imports from Canada and Brazil rose as meat processors were looking for cheaper grain (even switching to wheat) what disrupted the normal route of ocean-going vessels.

A grain elevator in Arkansas was bidding \$4.41 per bushel for first-week August delivery while a processor in Iowa was offering \$6.01. As a single barge represents about 59'000 bushels, this meant a price difference of over \$90'000 per shipment. However, by the time harvest in the Midwest started, the northward flow stopped. (Polansek 2013a)

7. Trading companies

Often referred to as ABCD, Archer Daniel Midland, Bunge, Cargill and Louis Dreyfus are the four major players in agricultural commodities trading. As they control together up to 90% of global grain trade they will be looked at closely. (Murphy, Burch, Clapp 2012, p. 3) Since harvest occurs rather at the end of the year, the consequences are to look for in the 2012 as well as the 2013 results. Unfortunately for this project, Cargill and Louis Dreyfus remain privately held, therefore less information is available about them.

In August 2012, Glencore's head of agriculture, Christopher Mahoney, qualified the market environment as good. He said that high prices, lots of volatility, a lot of dislocation and tightness provided plenty of arbitrage opportunities. (Meyer 2012a) On March 27th 2013, the Financial Times titled "*US drought a bounty for Dreyfus*". In its article, it also said the following:

"The worst US drought in half a century and the resulting spike in prices of food staples including corn, soybeans and wheat last summer was a boon for many of the world's top agricultural commodity traders. Cargill's profits in the July-September quarter quadrupled, and Bunge's profits in the same quarter more than doubled. LDC said that its grain and oilseed division had experienced a strong year, with oilseed trading enjoying a stellar success." (Farchy 2013)

Apparently, the drought has benefited the trading companies. The following analysis of the companies' results will try to demonstrate whether the drought was really beneficial and profitable on the long run or only a short-term boost with negative impacts hitting back later and if all companies went through the same way.

7.1. Cargill

Cargill is the world largest trading company of agricultural commodities. (Blas 2012b) Its net sales reached \$136.7 billion in 2013 thanks to its 143'000 employees in offices that span 67 countries. (*Our Company - At a Glance* 2014) It is such a big company that it is considered as "*a bellwether for the world agricultural economy*" (*Cargill profit quadruples, led by grain sector* 2013) It is extensively diversified as it is involved in every step of the value chain. It provides grains and products to farmers from whom it then buys the crops. It masters the animal feed manufacture which is not only sold on the market, but also given to its own animal farm. It operates several meat processing assets to then market finished meat products under its own brands. All along the value chain, Cargill offers its expertise through services to its partners. In order to transport commodities and deal with financial issues, it also operates a transportation fleet of over 500 vessels and has an in-house finance department that acts almost like a bank, providing financial solutions to the company's partners and customers. In addition, the trading house is active in energy and metals trading as well as in personal care and pharmaceutical products. (*Products & Services* 2014b) Still owned by the family that created the business almost 150 years ago, it is not compelled to disclose any financial information since it is not quoted on any stock exchange. However, it does publish quarterly and yearly basic data. The trading house's fiscal year is from June to May.

Cargill reported poor results in its fiscal 2012 year due to volatile commodity markets and slow global economic growth. "*A year ago our markets were dominated by political and macroeconomic uncertainty.*" (*Cargill profit quadruples, led by grain sector* 2013) She also mentioned the European debt crisis as factor harming trading results. The fact that markets were driven more by uncertainties than supply and demand fundamentals hurt the very diversified company. Two-third of its businesses recorded lower results with even losses in cotton and sugar markets. Overall, the company's net income decreased 56% from its 2011 fiscal year. (*Cargill reports fourth-quarter and fiscal 2012 earnings* 2012)

In the summer 2012, the company was expecting changes in global supply of raw materials as weather pushed trading companies to source from other countries than the U.S. In the middle of the summer, its Chief Financial Officer, Sergio Rial, expected to benefit from the drought in the short term, sourcing from other regions such as South America. "*We believe we have a global footprint that should help us to weather the challenges that are coming.*" He said. (Meyer 2012b) The company was right as its first quarter 2013 was one of the best in its history. Its net income more than quadrupled

compared to the same period the previous year as its customers were trying to offset the grains shortage. (Blas 2012c)

But it was a particularly challenging year for its animal protein businesses which were affected by high feeding costs and tight cattle supplies. The company even had to idle a Texas slaughterhouse since the drought brought about low cattle supply. *"The drought will mean less [grain] volume out of North America to either handle or process but that's probably not as big of an impact as beef."* (Stebbins 2012) Since commodities are physical and money is made on large transactions, it is difficult to remain profitable with lower volumes, unless margins improve.

Its third fiscal quarter⁶ is right after the harvesting period which is why it was the most sensitive to the drought effects. Four out of five of the company's business segments suffered lower profits with a 42% drop in earnings compared to the previous year. (Meyer 2013a)

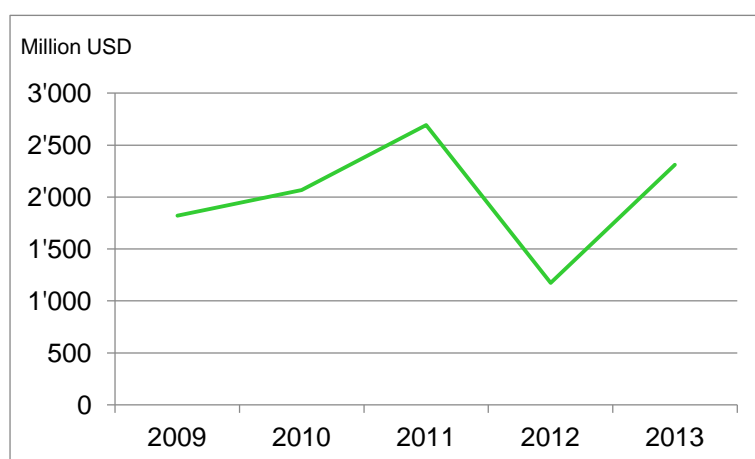
Nevertheless, although nine of its 60 business units incurred losses in 2013, mainly due to drought-caused small harvests, the company achieved good results. (*Cargill 2013 Annual Report* 2013, p. 1) Due to its very broad and diverse activities, Cargill managed to cope well with the drought. *"For us it's a matter of being positioned globally with our infrastructure and our assets."* (Stebbins 2013) Present globally, Cargill could react quickly to source corn and soybeans in Brazil and Argentina that had record harvests. But the origination and processing segment remain important in terms of finance as it is generally the largest contributor to earnings. It is unfortunately impossible to know the details about the trading arm of the company.

7.1.1. Synthesis

Cargill has benefited from the drought in the short-term thanks to its global footprint. It had so much optionality that it could source from any other place. Though, it felt the effects downstream as it is very active in meat processing. Because of lower supplies, some of its assets had to idle what reduced their profitability.

⁶. Its third fiscal quarter is December to February.

Figure 13 – Cargill net income



(Five-Year Financial Summary 2014)

However, Cargill is so integrated and diversified that the drought only affected a portion of its activities. As proved by the graph, its earnings are more influenced by economic and political environment and the fundamentals of supply and demand than by the effect of weather on crops.

7.2. Louis Dreyfus

With only up to 22'000 employees at peak season, Louis Dreyfus is the smallest of the ABCD in terms of people. (*At a glance* 2014) It has more of a trading focus than the three other companies with non-current assets adding up to only 25% of its balance sheet. (*Louis Dreyfus 2013 Annual Report* 2014, p. 77) Nevertheless, it is present in over 100 countries and achieved net sales of \$63.6 billion in 2013. (*Financial highlights* 2014, *Around the world* 2014) The trading house considers itself as “a multi-origin, global supplier of corn”. (*Louis Dreyfus 2012 Annual Report* 2013, p. 47) Yet it manages a broad portfolio of mainly agriculture-based commodities, such as coffee, cotton, dairy, grains, juice, etc. It also has a freight and a finance platform to transport raw materials and provide support to the commodities platforms. (*Our Platforms* 2014) It is 85% privately held, the remainder belonging to senior employees. (*Louis Dreyfus 2013 Annual Report* 2014, p. 9) However, the company does publish its financial and annual report. The company's financial year is the calendar year.

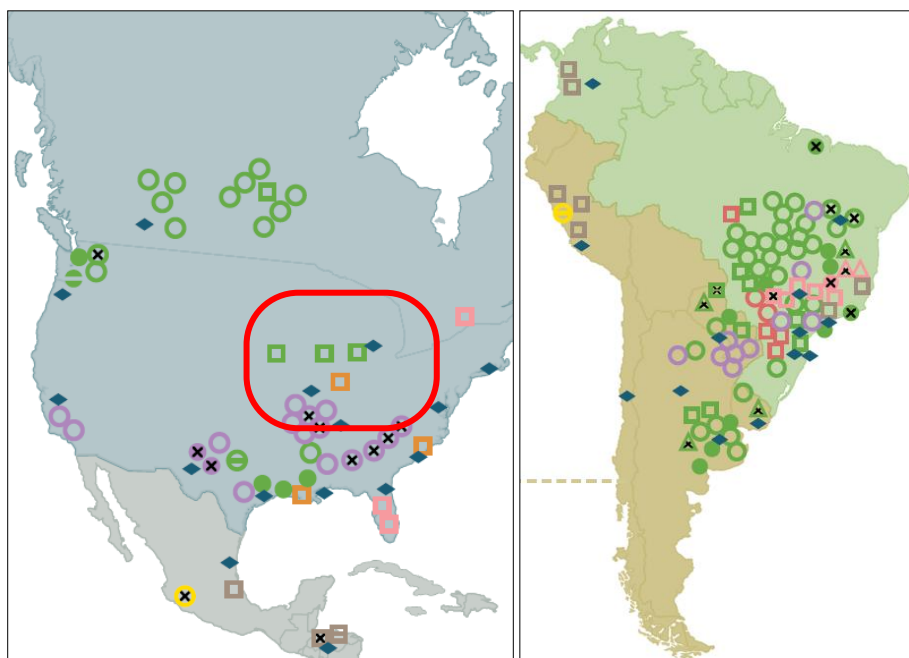
After low 2012 harvest in the United States, the company reacted by sourcing commodities in other part of the world and particularly corn in Brazil, Argentina and Ukraine. (Farchy 2013) Simultaneously, thanks to its global distribution networks it increased its soybean meal business in West Africa to become a leading supplier. It took advantage of its capacity to export grains and oilseeds to North America where import demand increased following reduced crops. Its Proteins segment which includes oilseeds, grains, rice, feed, freight and finance managed to optimize its origination to meet strong demand. “*Despite a significantly reduced crop size caused by droughts, the [oilseeds] Platform recorded an exceptionally profitable year in 2012 thanks to an excellent understanding of the markets' needs and evolution.*” (*Louis Dreyfus 2012 Annual Report* 2013, p. 45) Hence, its net profit rose 36% from the previous year, close to setting a new record high. (*Louis Dreyfus 2012 Annual Report* 2013, p. 78)

Since the company had an outstanding year in 2012 it was likely to be less profitable in 2013. Although the second half of 2013 was good, namely in line with the 2009-2011 average, the first half was tough as the net income fell by about 13% compared to the same period of 2012. Low grains and oilseeds inventories from the poor U.S. harvest provided limited crushing, processing and trading opportunities, thus making the proteins segment's operating result to fall almost a third. (*Louis Dreyfus reports drop in net income after U.S. drought* 2013; Terazono 2013; Trompiz 2014)

Louis Dreyfus claims that besides farming, it is present at every step of the value chain in North America. However, the trading house is not as much engaged in grains and

oilseeds in the United States as it is in Brazil. As shown on the maps below, it actually operates only three grains and oilseeds processing assets in the Midwest where the majority of corn and soybeans production takes place. (*Louis Dreyfus 2013 Annual Report 2014*, p. 12) It owns two ethanol plants in Iowa and Nebraska and the U.S. largest biodiesel plant based in Indiana which all underperformed in 2012 since margins in export elevation and ethanol processing were at their lowest for several years. (*Louis Dreyfus 2012 Annual Report 2013*, p. 47) In total, it owns 24 grains and oilseeds assets in North America compared to 63 in South America. The following pictures show the fixed assets locations of the company in North and South America. The green symbols tab the grains and oilseeds platform and their shapes represent the different types of assets.

Figure 14 – Louis Dreyfus North and South American assets locations



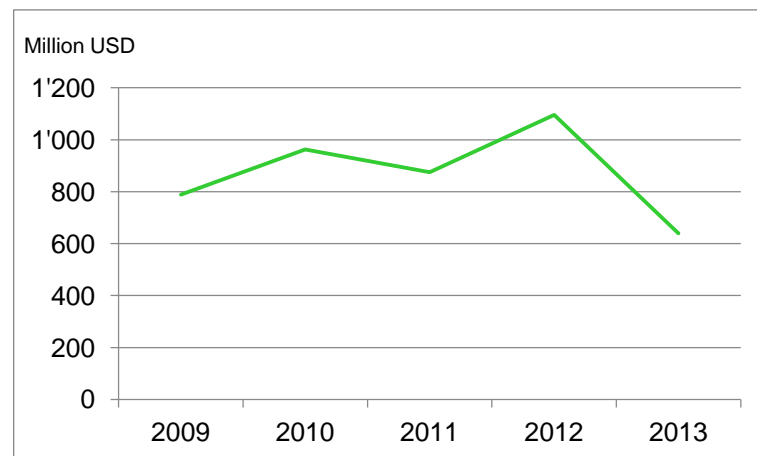
(*Louis Dreyfus 2013 Annual Report 2014*, p. 12)

The consequences would have been a lot worse if the drought had occurred in Brazil since all the company's assets would have been much less used. The less an asset is used, the less profitable it is which is why all three processing plants in the Corn Belt underperformed in 2012.

7.2.1. Synthesis

Louis Dreyfus has benefited much from the drought in the short-term thanks to its robust network. It owns assets in all key regions for grains and oilseeds and could therefore source easily and cheaply in other countries to offset high demand in the US at record prices. However, low inventories had effects that the company could not avoid. In the first half of 2013, the company faced low processing and trading opportunities due to low volumes.

Figure 15 – Louis Dreyfus net income



(*Louis Dreyfus 2011 Annual Report 2012*, p. 78, *Louis Dreyfus 2013 Annual Report 2014*, p. 76)

As displayed in the above chart, Louis Dreyfus had a tough year in 2013. After a breaking-record year 2012, it was difficult to do better in 2013 given the drought. The consequence was a 40% plunge in net income.

7.3. ADM

Archer Daniel Midland is the world's largest corn processor. (Singh 2013) It employs 31'000 people and generated net sales of \$90 billion in 2013. It has over 270 processing plants and operates in more than 75 countries. (*Facts* 2014) It is much engaged in grains and oilseeds processing, turning them into a large range of food, feed, fuel and other industrial products. It provides plenty of solutions for animal nutrition, food industries such as bakery, confectionery and beverages as well as other industries to which it supplies biofuels, chemicals and other tailor-made products. The company operates an extensive network of transportation assets including trucks, rail cars, barges and oceangoing vessels. Besides, it offers financial services to farmers through its finance platform. (*Products & Services* 2014a) Compared with the three other trading houses, ADM is much more focused on the North American market where almost 90% of its grain storage capacity is located. It owns a heavy asset base with 47 oilseed and 17 corn plants. (*U.S. Facilities* 2014) It is the nation's largest producer of corn-based biofuel and the second largest producer of ethanol. Its 8 corn-based ethanol facilities allow a production capacity of 1.8 billion gallons per year or about 13% of the country's production. (*Biorefinery Locations* 2014, *Statistics* 2014, *Cleaner, Renewable Energy* 2014) It also operates 3 biodiesel plants that have together a production capacity of 140 million gallons per year or 10% of the country's production. Its fixed assets share of 35% of the balance sheet is typical of a well integrated and diversified trading house. (*ADM 2013 Annual Report* 2014, p. 50) It is a publicly traded company listed on the New York Stock Exchange and produces annual reports. Its trading data are available since 2007. Until 2012, the company's fiscal year was from July to June but for comparative analysis and increased efficiency, ADM changed its fiscal year to align with the calendar year. (*Facts* 2014) Hence, there is a 2012.5 annual report for the period July-December 2012.

Already before the drought, ADM had difficulties with its trading arm. For the 2012 fiscal year, operating profit from merchandising and handling was considerably lower than for the previous year because low inventories and high prices hindered exports. The company also faced negative margins in its ethanol business due to overproduction and reduced export demand. As described by its Chairman and CEO, Patricia A. Woertz, the period from July to September was "a complicated quarter, *challenged by the drought*". (Woertz 2012, p. 1) Net income plummeted 60% following a 48% drop in merchandising and handling operating profit from the same quarter a year earlier. (Woertz, Young, Luciano 2012, pp. 5, 6)

ADM not only trades and processes agricultural commodities but also transports them. In particular, it owns or leases 2'500 barges, mostly in the United States. (*Facts* 2014) However, with drought-reduced crops and extremely low Mississippi river water levels, they were underused throughout the summer since they were traveling half empty in order not to hit the bottom. Consequently, operating profit for transportation decreased 17% for the second half of 2012 compared to the same period a year earlier and 30% for the 2013 calendar year compared to 2012. (Woertz, Young, Luciano 2012, p. 6, 2013a, p. 7; *Fourth Quarter 2013 Earnings Conference Call* 2014, p. 5)

Hence, merchandising opportunities in the second half of 2012 were weak due to low volumes and reduced cost-efficiency on rivers. Record corn prices also meant higher input costs for ethanol production. Together with low demand for ethanol, margins turned negative causing weak operation to idle and the company to lose 120 million on its bioproducts activities. (Woertz, Young, Luciano 2012, p. 6, 2013a, p. 7) The company said that its liquidity needs could be negatively affected by high prices and volatility. At the end of the year it stated the following:

“If the drought continues in 2013, the lack of available water for use in processing operations and the impact of low water levels in navigable waters could have a material adverse impact on operating results.” (ADM 2012.5 Annual Report 2013, p. 14)

In result, without considering a \$62 million gain on interest it has in another company, ADM's operating profit for merchandising and handling activities fell 25% to \$237 million compared to the last six months of 2011. (Woertz, Young, Luciano 2012, p. 6, 2013a, p. 7)

Yet, ADM adapted its activities and network to ship grains and oilseeds efficiently during the last three months of 2012. Its soybean operations, including a massive Decatur⁷-based corn and soybeans facility processed a record 8.4 million MT of newly harvested oilseeds to sustain export demand for soybean meal. Spurred on by crushing and origination activities, these three months of harvest period turned out to be the most profitable period of 2012 and 2013 with a six-fold increase in net income from the previous year. But on the long run, a single business unit cannot offset the poor performance of its other activities.

Merchandising and handling results for the first quarter of 2013 were similar to the end of 2012 with a 42% drop in earnings causing net income to fall a third from 2012. (Woertz, Young, Luciano 2013b, p. 6) Pressured by these markets conditions and poor

⁷. Hometown of ADM, Illinois, United States

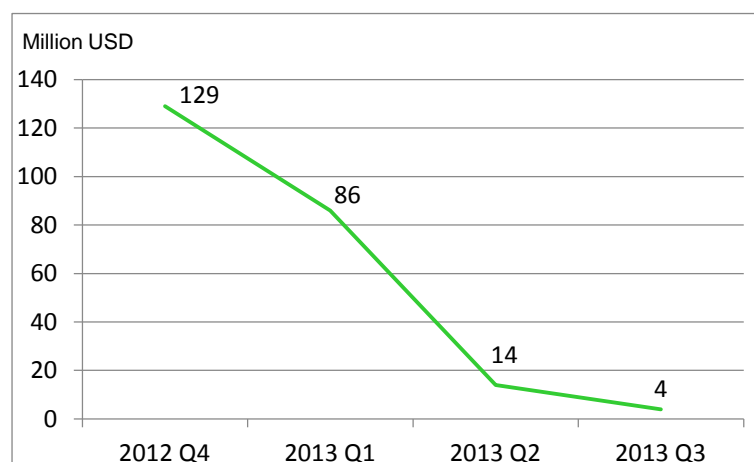
results, ADM cut 1'200 jobs globally to reduce costs. (Stebbins 2012; Polansek 2013b) But its ethanol business improved gradually and its bioproducts activities were profitable for the first time since June 2012.

The second and third quarters of 2013 were poor for trading activities and even got worse as crops available reduced to nothing. While this was still a tough period for its corn processing activities, results were positive and ethanol plants became again profitable. After idling of some assets, ADM put them back into operation. *“We have all these assets [...] that are not being utilized; [...] we will be filling those assets.”* (Meyer 2013b) Net income for the second quarter were still 21% below the previous year but more than doubled during the third one and reached 476 million under the momentum of the oilseeds processing activities. (Meyer 2013c)

7.3.1. Synthesis

Although oilseeds processing activities helped ADM mitigate the impact of the weather, the trade year following the drought was very tough. Its trading activities managed reasonably well at the end of 2012 but were strongly hit by adverse markets conditions and low volumes in 2013. Excluding assets impairment charge, merchandising and handling operating profit plunged 257 million or 54% in 2013 principally due to lower origination and export volumes. On average over the third quarter of 2011 until the first quarter of 2014, operating profit from trading operations was 36% of total earnings, but fell to 16% for the trade year following the drought. The following chart demonstrates clearly the drop in trading profit.

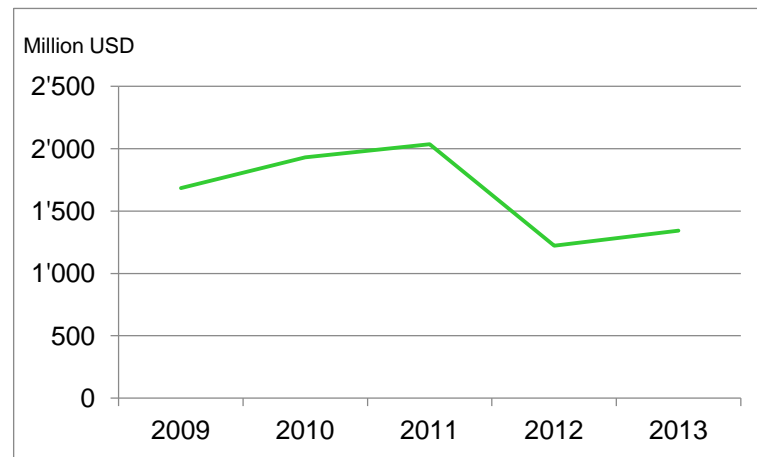
Figure 16 – ADM merchandising and handling profit



(Woertz, Young, Luciano 2013a, p. 7, 2013b, p. 6, 2013c, p. 6; *Third Quarter 2013 Earnings Conference Call* 2013, p. 5)

The consequence of low crop levels adversely impacted ADM's ethanol business with only 151 million profits for its bioproducts over the trade year following the drought compared to 335 million a year earlier. Earnings from transportation operations dropped by 34 million or over 30% as lower U.S. exports reduced barge freight utilization. (*Letter to Shareholders 2014*)

Figure 17 – ADM net income



(ADM 2013 Annual Report 2014, p. 22)

Overall, ADM really felt the effects of the drought which impacted much its 2013 results. As shown on the above chart⁸ its net income was directly hit as the drought touched most of its core activities. However, this decrease was not significant enough to create a strong market reaction since the trading house's stock price fell less than 2% on the disclosure day of the 2013 results. (*Archer-Daniels-Midland Company Stock Chart 2014*) It would have been a lot more interesting to be able to 2012 and 2013 both going from July to June. In the above chart, the net income for 2013 include the 2013 excellent harvest which therefore mitigates the financial impacts of the drought.

⁸. Because of ADM's change in its fiscal year, the data above are approximative. The year 2012 is the period July 2011 to June 2012 while the year 2013 is the calendar year.

7.4. Bunge

Founded in 1818, Bunge is the oldest of the four companies. (*History of Bunge* 2014) With over 35'000 employees, it is present in about 40 countries and achieved net sales of \$61.3 billion in 2013. (*About Bunge* 2014) The agribusiness segment is clearly the largest of its four businesses in terms of production capacity and earnings with a focus on oilseeds and sugarcane processing. Once processed, these commodities are either sold as food or feed ingredients, or marketed under Bunge's consumer brands. It operates 103 asset in the United States, among which, 68 are grain elevators. It is little engaged in corn-based ethanol with only one refinery producing 110 million gallons per year; however, it has a sugarcane-based ethanol production capacity of about 350 million gallons per year. (*Bunge North America* 2014) The company owns substantial assets outside of the United States as part of its diversification strategy to mitigate risks. Indeed, over 55% of its production capacity is located in South America and mainly in Brazil where it also fully or partially owns 11 port terminals and 8 sugarcane mills. (*Bunge 2013 Annual Report* 2014, p. 17) "*We are a leading, integrated producer of sugar and ethanol in Brazil, and a leading global trader and merchandiser of sugar.*" (*Bunge 2013 Annual Report* 2014, p. 2) Its non-current assets constitute 34% of its balance sheet what is typical of a well integrated and diversified trading house. It is a publicly traded company listed on the New York Stock Exchange and produces annual reports. However, it does not disclose details about its trading and merchandising results, nor about its different commodities' results. The company's fiscal year is the calendar year.

The second half of 2012 started very well for Bunge whomore than doubled its net income in the third quarter. Although agribusiness activities were the largest contributor to these good results, every business and region of the globe performed well. The company took advantage of a volatile and complex market environment as well as unusual trading flows, shipping Brazilian corn to the U.S. (Meyer 2012c) However, the company was looking forward to the new harvest. "*As new crops are harvested, we should see a more balanced supply-demand situation, which will be good for consumers and for the market overall.*" (Polansek 2012)

Yet this was only to make up for the \$599 million loss of the last quarter of 2012. Although it is mainly due to goodwill impairment and loss from discontinued operations which are both not related to the drought, gross profit was still 23% lower than the last quarter of 2011. Bunge rushed to buy expensive commodities in October as it thought

crops supplies would be worse than they actually were. But prices relaxed later as markets adapted and supplies fears eased. (Polansek 2013c)

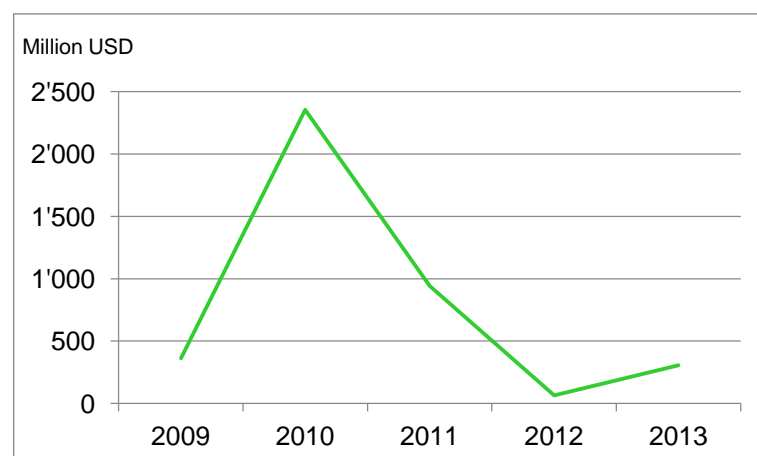
The beginning of 2013, usually a slower period for Bunge since harvest is over in North America and yet to come in South America, was handled well with net income nearly doubling for the first three months. However, results in agribusiness were 11% down.

The second and third quarter of 2013 were tough for Bunge which felt the lingering effects of the drought-reduced volumes and lower prices. It even had to idle its Kansas soybeans processing plant as supplies were too low to keep running. (Terazono 2013) Although it generally achieves good results in the second quarter thanks to the South American harvests that peaks at this period, it was not enough to compensate the downturn in the United States. The company's net sales were 18% lower in the third quarter compared to a year before. Consequently, results for the two quarters tumbled down to a \$12 million net loss compared to \$571 million profit a year earlier. (Meyer 2013d)

7.4.1. Synthesis

Overall, Bunge coped with the drought relatively well. It is more involved in South America than in the North with a well developed network in Brazil. Thanks to its little involvement in corn operations in the U.S., its activities were kept away from the drought damages. In 2013, volumes handled in agribusiness increased 3%, mostly due to record harvest in Brazil which drove net sales 2% up.

Figure 18 – Bunge net income



(Bunge 2013 Annual Report 2014, p. 21)

The above chart summarizes the company's net income from 2009 to 2013. While in 2010 Bunge realized a net gain of 2'440 million for the divestiture of its fertilizer nutrients assets, it had to incur 856 million of goodwill impairment and loss from discontinued operations in 2012. Its net income is normally in the range of that of 2009 with an average over the 2000-2009 period of 450 million. (*Bunge 2004 Annual Report 2005*, p. 28, *Bunge 2009 Annual Report 2010*, p. 1) Although these net income inconsistencies and the huge drop from 2010 to 2012 were rather related to accounting and non-core operations than to the effects of the drought, they had a strong impact on the company's stock price which lost 9% on the disclosure day of the 2012 results. (*Bunge Limited Stock Chart 2014*)

7.5. Comparison & Findings

Now that we have analyzed each company independently and learned how they coped with the drought, let's compare them. It is interesting to note that the four companies had roughly the same reaction. They all tried to leverage their international presence and to take advantage of high prices and volatility in order to increase their profit right at the beginning of the drought. But some were more successful than others.

In 2013, Cargill, ADM and Bunge increased their income. While Bunge could hardly do worse than its dramatic 64 million in 2012 and the figures for ADM are ambiguous due to the change in the company's fiscal year, Cargill is the only company that truly coped well with the drought. Two-third of its business units achieved better performance than the previous year. *"The fact is, there may be struggles in one part of the world or one industry. But in other parts of the world, other geographies and industries, we're doing quite well."* (Meyer 2013b)

The ABCD do not have the same business model since they are not active in exactly the same markets. They differ in terms of the regions they operate in, the commodities they process and the volumes they haul. The major reason why ADM suffered from the drought more than the others is simply that it is much more focussed on the U.S. market. It owns a lot of assets in the United States that could not be fully used due to the drought-reduced volumes. However, although merchandising and handling activities, which are the largest contributor to net earnings, achieved poor results, ADM is diversified enough to still have made a profit.

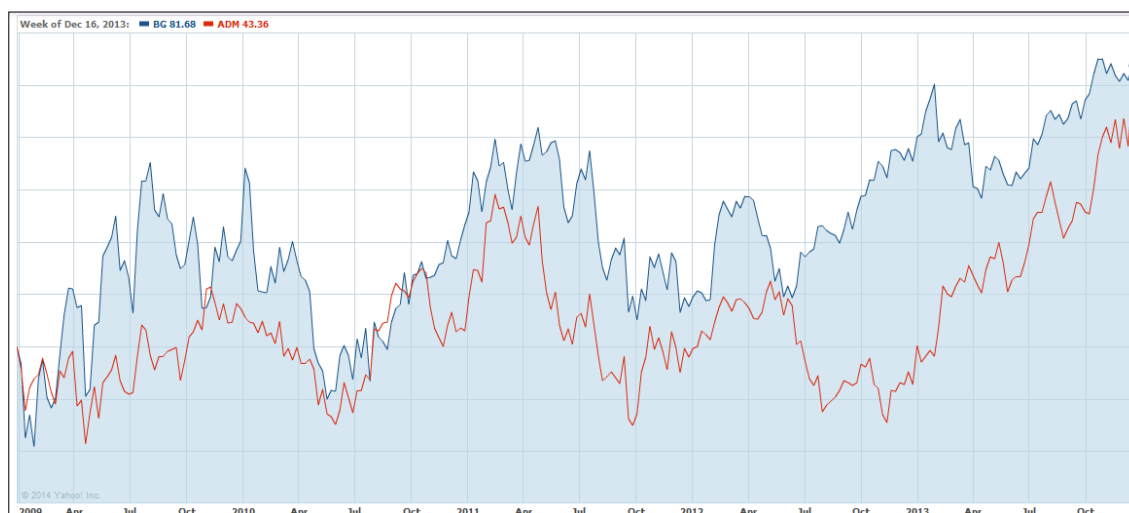
Table 3 – Companies comparison

Values in million USD, except Income per employee	Cargill	Louis Dreyfus	ADM	Bunge
Employees	143'000	22'000	31'000	35'000
Net income 2013	\$ 2'312	\$ 640	\$ 1'684	\$ 306
Income per employee	\$ 16'168	\$ 29'091	\$ 54'323	\$ 8'743
Fixed assets	\$ 22'682	\$ 4'739	\$ 15'222	\$ 9'009
Total assets	\$ 59'880	\$ 19'175	\$ 43'752	\$ 26'781
Fixed assets of total assets	37.9%	24.7%	34.8%	33.6%
Strong presence	Worldwide	South America	USA	Brazil

Sources: Cargill (2014), Louis Dreyfus (2014), ADM (2014), Bunge (2014)

From the table, it is clear that ADM's employees are the most productive in terms of income per person. The company best manages its people since they achieved higher results than those of the other companies. Bunge is the least efficient with more employees than ADM and a significantly lower income.

Figure 19 – Stock price: Bunge vs ADM



(Archer-Daniels-Midland Company Stock Chart 2014, Bunge Limited Stock Chart 2014)

While Bunge's stock prices tends to remain higher than ADM's one, they are generally much correlated. However, when the drought intensified in June 2012, ADM's price plummeted 20% until November whereas Bunge's price climbed 20% over the same period. Although the two companies can trade commodities similarly and in almost any place of the world, their assets are located on different markets. Hence, the weather in a particular region will impact the companies differently.

8. Conclusion

After this analysis, we can underline that the ABCD did not go through the drought year the same way and did not achieve similar results. Although they look very much alike at first glance, they are inherently different in their strategies.

Unfortunately, trading data for three companies were not available but the merchandising and handling data from ADM let think that opportunities were weak for all companies trading corn and soybeans. This analysis has proven that in the long term the ABCD did not benefited much from the drought. *“At the end of the day, lower grain volumes are not as good for overall performance for these companies as more grain volumes.”* (Meyer 2013b) It is easier and more profitable for a company to deal with such an event when it is integrated and above all with very diversified asset locations. It is crucial for a trading house to secure sourcing all over the world in case one region has a production failure. Being too much focussed on one part of the world exposes therefore the company to a regional event like a drought.

The four companies are diversified and integrated to a certain extent. Louis Dreyfus is the closest to a pure trading company with fewer employees and about 25% of fixed assets. Yet so many fixed assets is not typical of a trading company. Pure traders which only buy and sell commodities have a fixed-assets ratio below 5%. The same point can be made about the employees. With over 140 thousand employees, is Cargill still a trading house? It is interesting to compare Cargill to Vitol, an energy-focussed trading house that has not been looked at in this project. (*Vitol | Trading* 2014) In 2013, Vitol achieved twice Cargill's revenues with less than 5'500 employees which is much more typical of a pure trading company. (*Vitol | Key statistics for 2013* 2014, *Vitol | Our people* 2014) Thanks to the merchandising and handling data from ADM, we could see that this activity only represent a part of the company's scope of operations since it still made higher profit than in 2009 and 2010. I therefore believe that despite their trading activities, the ABCD, and especially Cargill, are more processors and logistic provider than real traders.

But in the end, diversification is probably not over. *“This consolidation trend will likely endure into 2013, calling for continuing effort on our side, as we seek to maintain or gain leadership in all our markets”.* (Farchy 2013) “The market has shown that it is necessary to have large companies [...] to operate and serve the market in these volatile times. [...] We are part of it.” (Hunt 2012)

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